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THE ESSENTIAL CHARACTERISTICS OF POST - KEYNESIAN ECONOMICS

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Master on hard disc in office computer.

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A. The following analysis registered my final escape from the confusions of the Quantity Theory, which once entangled me.

B. I regard the Price level as a whole as being determined in precisely the same way as individual prices; that is to say under influence of supply and demand.

1. Technical conditions, the level of wages, the extent of unused capacity of plant and labour, and the state of markets and competition determine the supply conditions of individual products and of products as a whole.

2. The decisions of entrepreneurs, which provide the incomes of individual producers and the decisions of those individuals as to the disposition of their incomes determine the demand conditions. And prices - both individual prices and the price-level - emerge as the resultant of these two factors.

C. Money and the quantity of money are not direct influences at this stage of the proceedings. They have done their work at an earlier stage of the analysis.

D. The quantity of money determines the supply of liquid resources, and hence the rate of interest and in conjunction with other factors (particularly that of confidence) the inducement to invest, which in turn fixes the equilibrium level of incomes, output and employment and (at each stage in conjunction with other factors) the price level as a whole through the influences of supply and demand so established.²

2. Introduction to the French edition of John Maynard Keynes, The General Theory Of Employment Interest and Money as reprinted in Collected Works of John Maynard Keynes Vol VII pp. xxxiv - xxxv. Henceforth I will refer to this work of Keynes as the General Theory.

I have taken the liberty of breaking what Keynes wrote as part of one paragraph into these sound bites.

1. Introduction.

A commonplace of the current discourse, whether the forum be the press or learned journals, is the assertion that Keynesian Economics is dead. Like peace, the economics of Keynes has never had a chance. Post Keynesian economics, while not wedded to taking every scrap of Keynes' General Theory and after writings as gospel, is a tendency in economics that aims to give the economics of Keynes a chance.³

A unifying element in Post Keynesian economics is the view that in the General Theory Keynes set out a theory of a capitalist economy that is genuinely different from the orthodox theory of his day, Marshallian partial equilibrium theory, and *pari passu* from the orthodox theory of our day, mathematical general equilibrium theory.

In my view the essential aspects of the Keynes revolution in economic theory are

3. See A. Klammer Conversations With Economists Rowman & little publishers, 1983 for the disdain that many of the successful mainstream economists hold for Post-Keynesian views.

Post Keynesian economists have done better at analyzing and explaining the progress of advanced capitalist economies, over the entire post war period as well as over recent years, than a representative orthodox or mainstream economist. This is so because Post-Keynesian economists reject any formulation of the economic process that splits the monetary and financial aspects of the economic process from so called "real" sectors.

1) the integration of money and finance in determining economic variables (doing without the postulate of the reals and therefor of the neutrality of money),

2) the conclusions that every reading of an economy is of a transitory position and that business cycles and even great depressions are endogenous outcomes of the economic process, and

3) the proposition that economic policy affects the course of the development of an economy.

In the Keynes view, except by an rare coincidence of circumstances, money is never neutral.

An implication of the above is that the tradition in economics that *ties the new into the old*, as J.R. Hicks does in Mr Keynes and the Classics, misses the essential point of the General Theory.⁴ The programs of research, interpretation and implementation that followed the lead of Hicks' article led to the "Keynesian" theory of the 1960's which took the form of:

1. The neo classical synthesis, which in an attempt to integrate the economics of the General Theory with equilibrium economic theory, ended up subordinating the economics of the General Theory to the barter based and timeless general equilibrium theory,⁵ and

The distinction between the Economics of Keynes and Keynesian economics was made by Axel Leijonhufvud, On Keynesian Economics and the Economics of Keynes, London: Oxford University Press, 1968.

4. J.R. Hicks, Mr Keynes and the Classics, A suggested Interpretation, Econometrica 1937 pp147-159.

5. The introduction of a simplistic supply and demand for labor as determining the equilibrium employment and real wage. which

2. Ad hoc econometric forecasting models, which ignore the innate interdependence of the monetary - financial dimensions and the investment - consumption - production - employment aspects of a capitalist economy.⁶

These "Keynesian" models used the "Phillips curve", which related changes in the money wage rate and therefor the price level of aggregate supply to the unemployment rate, as the price level determining relation. The Phillips curve enshrined the trade off between inflation and unemployment as a dominant constraint upon policy. This "Keynesian" model failed to adequately catch the inflation of the 1970's. It was the failure of the Keynesian model, as well as a failure of the policy regime that was taken to be Keynesian, that led to the fading of support for both the analysis and the policy of the 1960's as the 1970's rolled around.⁷

dominate the aggregate demand determining relations in setting the equilibrium of the economy is the key step in the forcing the Keynes structure into an equilibrium framework. The result has been a research program which requires that macroeconomic relations conform to what are taken to be the microeconomic conditions.

6. These forecasting models were initially derived from the tools used in macroeconomic planning during World War II. In the war and early post war era the close interrelations that are normal for a capitalist economy among investment and the banking and financial structure were attenuated. It is not at all surprising that models which ignored finance were adequate for forecasting purposes in the first decades after World War II and lost their power as instruments for forecasting when money and finance became of increasing importance.

7. William C. Brainard and James Tobin "Pitfalls in Financial Model Building" American Economic Review, May 1968.

In his preface to the French edition of the General Theory Keynes emphasized that his contribution marked a "... final escape from the confusions of the Quantity Theory...". The confusions of the Quantity Theory are embodied in the proposition that the essential behavior of a modern capitalist economy can be explained without reference to money and the precise analysis of the role of money and finance in the economy. To create such a theory the economy is modeled so that preferences and production functions, neither of which have monetary variables, along with maximizing behavior yield an equilibrium which of necessity is independent of the monetary system.

In the modern (Friedman, Lucas etc) versions of the Quantity Theory monetary variables are allowed into the model, but always in such a way that they can lead only to transitory disturbances of the equilibrium values of variables, but they cannot permanently affect the equilibrium values.⁸

In the citation at the head of this piece Keynes separates the prices in the economy into two "classes": the first class is the prices of current output and the second class is the prices of capital and financial assets.⁹ The prices of current output are the mechanism by which the producers of current output gather

8. This means that the equilibrium of the economy is not only independent of the values of the monetary variables but that the equilibrium is independent of the path by which it is achieved.

9. This separation is particularly clear in Keynes' rebuttal to Prof Jacob Viner's review of the General Theory. J. Viner "Mr Keynes on the Causes of Unemployment" Quarterly Journal of Economics Nov 1936, J.M. Keynes "The General Theory of Employment", Quarterly Journal of Economics, February 1937

the funds they need to pay their current operating costs, their overhead costs, meet commitments to pay as embodied in liabilities, and capture a margin of safety over their costs and payment commitments. The prices of capital and financial assets depends on the net cash flows these assets are expected to yield to whoever owns or operates them.

In the General Theory capital and financial assets are valued according to their expected incomes, expected liquidity, and expected carrying costs and the weight that asset holders assign to these components of the total yield of assets.¹⁰ As the prices of current outputs and the prices of capital and financial assets are determined in different markets and reflect different proximate determining variables the ratio of these prices can and do vary one from the other.

In the General Theory Keynes pointed towards a rejection of equilibrium as a state towards which the economy gravitates and from which, once it is achieved, it will deviate only as a result of exogenous shocks. Keynes did write in terms of a short period and a longer period equilibrium. However, Keynes used the term "equilibrium" in the special Marshallian sense, in which a solution to a problem is conditional upon holding some variables constant by placing them in a *caeterus paribus* bag. In the

10. Keynes had the prices of assets, both financial and capital, depend upon the Q's (Quasi rents), c's (carrying costs) and L (liquidity) they yield. General Theory pp 225-227, see also Hyman P. Minsky John Maynard Keynes, Columbia University Press, 1975 Ch. 4.

Marshallian analytic procedure items are first placed in a *caeterus paribus* bag and the status of the endogenously determined variables are determined. Items are then withdrawn, one by one, from the bag of *caeterus paribus* to determine how the equilibrium derived under restricted conditions carries through as to the environment is changed to allow for more complex determinants of prices and outputs.

To Keynes, equilibrium is a set of values that are implicit in the concatenation of variables that are assumed to be unchanging for the purposes of the argument, but which, in fact, do change, in a not necessarily deterministic manner, as a result of interactions that start from a momentary set of values.¹¹ This implies that the economy is best viewed as a set of interdependent processes, whose behavior generates the path, of the multitude of variables that make up an economy, through calendar time. Furthermore the interactions through time among the endogenous processes produces outcomes of apparent coherence which are succeeded from time to time by incoherent outcomes.¹²

11. At several points in his argument Keynes assumed that there is an equilibrium implicit in a set of initial conditions and adjustment processes. However the changes that the search for this equilibrium brings about changes both initial conditions and the search process. Therefore at best the implicit equilibrium is changing even as adjustments are made on the basis of a prior observed disequilibrium. There is no need for such a process to converge to an equilibrium, let alone a unique equilibrium.

12. I know of three articles that are still in the development stage that add financial concerns to aggregate models and derive time series that endogenously generate chaotic conditions. These three are:

1. Goodwin + Minsky = Chaos, Steven Keen, School of Economics,

The passage from Keynes' introduction to the French edition of the General Theory is the taking off point for this exposition because of the following:

1. The emphasis upon escaping "from the confusions of the quantity theory"
2. The proposition that "money and the quantity of money are not direct influences" upon output prices which are determined "under the influence of supply and demand."
3. The assertion that money and the quantity of money "have done their work at an earlier stage of the analysis".

This earlier stage takes place in the markets where the prices of capital assets, the liability structures used in financing both positions in capital assets and investment, and the pace of the aggregate of investment are determined.

What has passed as Keynesian economics is a variant of equilibrium analysis in which the equilibrium need not be at full employment and for which economic policy can be effective in altering the level of employment.¹³ Neither underemployment

University of New South Wales,

2. The Effects of Changes in Income Distribution, Financial Conditions and Tax Policy on the Dynamics of a Kalecki-Minsky Macroeconomic Model, Tracy Mott, University of Denver, Edward Slattery, Southwest Missouri State University and Grainger Caudle, Mars Hill College.

3. Financial Institutions, Economic Policy and the Dynamic Behavior of the Economy, Dominico Delli Gatti, Mauro Gallegatti and Hyman P. Minsky.

13. Keynes was not without responsibility for the integration of his theory into the equilibrium structure of neoclassical theory. He speaks of the equilibrium of the orthodox theory as one of a multitude of possible equilibria and

equilibrium nor policy effectiveness are sufficient to make an argument Keynesian. The salient contention that makes an thesis Keynesian is that the behavior and structure of financial (and money) markets and of product (and labor) markets are integral to the determination of the path of the economy through time: i.e. an essential aspect of the economy being modeled is that monetary variables are integrated into the relations that enter into the model of the economy which determines aggregate demand as well as relative prices and outputs.

2. The Neutrality of Money.

A. The problem.

The problem set by Keynes in the General Theory "...to escape from the confusions of the quantity theory..." remains a valid problem for economists. The meaning of this is to develop an economic theory which has the non-neutrality of money as an essential theorem: i.e. the general case is non-neutrality and neutrality is always some special case where markets function in some abnormal fashion.¹⁴ Frank Hahn has often stated that the Arrow Debreau model, which he considers the best available starting place for serious economic analysis, finds no place for

he accepted, however mistakenly, the J.R. Hicks interpretation of his theory.

14. It will be pointed out in the discussion of the Hicks diagram that money is neutral in "the liquidity trap".

money.¹⁵ This follows from what Hahn calls the axiom of the absence of money illusion (the axiom of the reals), that ultimately agents care only about the real variables - the flows of consumption through time.

This fundamental neo classical position has been stated by Lucas as:

"Any economic model is going to have at its center a collection of hypothetical consumers whose decisions, together with the technology and market structure, determine the operating characteristics of the system and whose welfare is the explicit subject of normative analysis."¹⁶

Lucas then specifies this to

$$E\{\sum_{t=0}^{\infty} B^t U(c_t)\},$$

which makes it clear that the objective of economic behavior is to maximize the present value of consumption sequences.¹⁷

The monetarists - the modern quantity theorists - hold that business cycles and inflations are caused by surprises in the behavior of money. Milton Friedman's early version of monetarist doctrine was politely skewered by Jack Gurley when he remarked

15. "The objectives of agents that determine their actions and plans do not depend upon any nominal magnitudes. Agents care only about real things such as goods, (properly distinguished by states of nature) leisure and effort. We know this as the axiom of the absence of money illusion, which it seems impossible to abandon in any sensible analysis." Frank Hahn, Money and Inflation, Cambridge, MIT Press, 1983.

Gerard Debreau, Theory of Value, New haven, Yale University Press 1959.

____ Kenneth Arrow and Frank Hahn, General Competitive Equilibrium, Holden Day, 1971

16. R. Lucas Models of Business Cycles, Yrjo Jahnsson Lectures, Basil Blackwell 1987 p. 20

17. E signifies expectations and $U(c)$ is a utility function with consumption as the sole operative variable.

that "Money is a veil, but when the veil flutters, real output sputters.": movements of the veil affect the behavior of the underlying body.¹⁸

B. New classical and New Keynesian approaches.

To get around Gurley's criticism monetarists had to construct models of the economy in which different classes of agents react in different ways to a change in prices. The idea of a money illusion¹⁹ that affects some but not all units for a time is a way of getting a non-neutrality which is transitory: non-neutrality rules for the time it takes for those who interpreted the observation incorrectly to learn the true nature of the change in prices.

Within any model based upon the Lucasian or a similar specification, the only variable that can be affected by a monetary change is the expectational variable, the E_x of Lucas's equation. The fundamental proposition of the new classical monetarists is that eventually expectations are based upon the "true" model of the economy, which in the view of monetarists is given by the equations of an idealized general equilibrium

18. J.G. Gurley, Review of Milton Friedman, "A Program for Monetary Stability", Review of Economics Statistics, 43 [1961], pg 307-308.

19. Money illusion occurs when some agents interpret an increase in the price of what they sell that is the result of inflation as an increase in their real income, while others make the correct inference.

system.²⁰ Milton Friedman specified that workers interpret a change in wages level as a change in real wages even though prices change with wages, whereas employers understand that such a change doesn't affect real wages. Lucas had a sample of agents misinterpreting the nature of the price change whereas other agents are perceptive and correctly interpret the change. It is assumed that those in error are punished by market outcomes for misinterpreting the change, they quickly learn that they were wrong and begin to operate on the basis of a correct interpretation of the monetary and price changes.

Both Friedman and Lucas assume some agents are smart and others are dumb. This means that a monetary change is not neutral in its impacts as long as some agents persist in misinterpreting the signals given by prices and becomes neutral as agents that have misinterpreted the signals get wise to their mistake.

20. *"Despite the importance of enterprises and money in our actual economy, and despite the numerous and complex problems they raise, the central characteristic of the market technique of achieving coordination is fully displayed in the simple exchange economy that contains neither enterprises nor money"* Milton Friedman, Capitalism and Freedom, University of Chicago Press, 1962 p.14.

The "real" economic results such as employment, its distribution among outputs, relative prices, including wages and interest rates are "ground out by the Walrasian system of general equilibrium equations, provided there is imbedded in them the actual structural characteristics of the labor and commodity markets, including market imperfections, stochastic variability in demands and supplies, the costs of gathering information about job vacancies and labor availability, the costs of labor mobility and so on.", according to Milton Friedman, *The Role of Monetary Policy*, American Economic Review, 58, no.1, March 1968.

As expectations, that guide the behavior of agents, are formulated to correctly reflect the behavior of the money supply, the stream of output and its distribution (distribution in such thinking is but another aspect of pricing) converge to the values as determined by preferences and production technologies. Money is not neutral only as long as error persists. The non neutrality is transitory because the behavior of the economy instructs agents about the true nature of the monetary change .

In this view fiscal policy, in the sense of deficits or surpluses, affects the economy only as it changes the quantity of money: all demand management policies operate by affecting the money supply. Monetary changes can only affect the money price level: the quantity theory of money is validated.

Within the Lucas specification of the problem of economics the money neutrality result can be overridden by making expectations something other than the outcome of a learning process in which agents find out how they fit into the preference system - production function structure which determines the equilibrium of the economy.

In contrast to the dumb and smart agents hypothesis of Friedman and Lucas, the new Keynesians, following the lead of Akerlof²¹ and Stiglitz²² make much of the existence of private

21. Akerlof, George, The Market for Lemons: Quality Uncertainty and the Market Mechanism, Quarterly Journal of Economics, August 1970 pp 588-500

It is now well known that the existence of a General equilibrium depends upon assuming that agents have perfect foresight, the equilibrium, if it exists, is not unique and in

(asymmetric) information.²³ Information asymmetries not only makes the system deviate from the result mandated by preferences, technology and competitive markets but it also makes policy conditionally effective. Non-neutrality is not a fundamental property of the system. It is a result of market imperfections, in terms of either information differences or market power.

One result of these New Classical and New Keynesian results is that macroeconomics has become a game of my guru is holier than yours, i.e. my "Leader's" special assumptions on how market function *so that non-neutrality results* is better than your "Leader's" special assumptions. As most of the players in this game are skilled enough in econometrics to use the potted programs, they are able to force support for their views from some corrupted data base.

Note that the New Classical and the New Keynesian economics, of the past two decades or so, represent victories for the economics of Keynes for both schools recognize the critical importance of the neutrality proposition. The name of the game for these "modern" approaches is to create a market situation

general the equilibria are not stable. See B. Ingrau and G. Israel, MIT Press 1989.

22. Stiglitz, Joseph and Weiss, Andrew "Credit Rationing in Markets with Imperfect Information" American Economic Review, June 1981.

23. Private or asymmetric information implies a monopoly. Each agent knows what she knows and others need conjecture what she knows. Instead of dumb and smart agents the, asymmetric information argument postulates that markets are rife with possibilities of adverse selection: only lemons will be offered on the market whether it be for used cars or financing.

that leads to the non-neutrality of money and then demonstrate that either

1. the situation is transitory - which is what is achieved by the peculiar rational expectations assumptions, or
2. the situation is due to a market imperfection - which is what is achieved by the asymmetric information and non-competitive market assumptions.

C. Keynesian non-neutrality.

It is obvious that more structure than merely production functions, preference systems and simple maximizing behavior is needed if the "consumption stream only" postulates of Hahn and Lucas are to be abandoned and if money is to be non-neutral for causes that are more fundamental than either the monetarist smart and dumb agents or the new Keynesian market imperfections of asymmetric information or market power. Chapter 1 of the General Theory reads:

I have called this book the *General Theory of Employment, Interest and Money*, placing the emphasis upon the prefix *general*. The object of such a title is to contrast the character of my arguments and conclusions with those of the *classical* theory of the subject, upon which I was brought up and which dominates the economic thought, both practical and theoretical, of the governing and academic classes of this generation, as it has for a hundred years past. I shall argue that the postulates of the general theory are applicable to a special case only and not to the general case, the situation of which it assumes being a limiting point of the possible positions of equilibrium. Moreover, the characteristics of the special case assumed by the classical theory

happen not to be those of the economic society in which we actually live, with the result that its teaching is misleading and disastrous if we attempt to apply it to the facts of experience."²⁴
(G. T. p.3)

The characteristics of the actual society in which we live includes bankers and clients of bankers. Bankers act as dealers and brokers in the financing of investment and of positions in capital assets. The banker's clients are businesses that require financing and units that have funds to place. The units with funds to place do so either on their own account or as agents (or fiduciaries) for the accounts of others.

The banker's dealing and brokering for a client first revolves around *pro forma's*, that businessmen who seek financing submit and which bankers then question: bankers are not simpletons who accept all that is put forth for them to finance as being worthy of financing. In their relations with business men, households and governments that require financing bankers are *designated sceptics*.

As dealers and brokers bankers have another task. As brokers they have to place the instruments they agreed to market and as dealers they have positions to finance. To do this they need to extoll the virtues of the assets they are selling or that they have in position.

Therefor bankers speak with two voices. They are sceptics as "underwriters" and enthusiasts as "sellers". In addition they play these roles as they seek to maximize their own income and

wealth. Bankers are self interested operators who need to inspire two sets of clients to believe that they are competent and disinterested. In such situations, which are loaded with uncertainty as to knowledge and probity of key agents, one way to insure a modicum of concern for the interest of client's is some form of co-insurance. In financial transactions this takes the form of the dealer or broker taking a position in the instruments being dealt or being compensated by assets that they are selling and which they cannot sell for some time.

D. The World of M, C, and M'.

Bankers and clients of bankers as financiers live in a world of $M \rightarrow C \rightarrow \text{Ex } M'$ and $\text{Ex. } M' > M$. Money, M, is invested in capital assets, "C", and over time these capital assets are expected to generate money flows, "M'", which are sufficiently greater than M so that the fear and loathing of uncertainty is overcome and investment is both demanded and financed.

The model for understanding an $M \rightarrow C \rightarrow \text{Ex } M'$ economy must include bankers, businesses that finance activity and positions in capital by borrowing from banks or through the good offices of bankers, and households that directly or indirectly own the instruments bankers market and that finance the position of dealers in financial instruments.²⁵ These classes of agents, are

25. The wording allows for complex financing layerings where there are "bankers" (money managers) such as mutual and pension funds which take positions in assets created by "bankers" as for example the packaging of mortgages into securities.

to be in the formal analytical structure at the beginning of the analysis and are not to be introduced into the argument in order to transform an unwanted result into a pre determined desired result. Thus, as a minimum, the agents in the analysis have to include consuming units which are the ultimate owners of wealth, business firms which are the proximate investing units and banking units.²⁶

M' is a flow of money incomes through time that is available to validate the investment of M (of money) in C (an investment output): M' is the capital income or profit derived from production. The *pro forma's* of the negotiations between bankers and business men are conjectural (or ex ante) income statements in which revenues and costs are estimated. The income and spending statements of businesses, households, government units and classes of financial organizations are ex post summaries of what happened in the economy.

The structure of an economic model that is relevant for a capitalist economy needs to include the interrelated balance sheets and income statements of the units of the economy. The principle of double entry book keeping, where financial assets are liabilities on another balance sheet and where every entry on a balance sheet has a dual in another entry on the same balance

26. Of course the real world includes governments as well as other countries, furthermore the "banking" component of the model opens up to include a wide variety of financial institutions in addition to the banks which issue liabilities that are counted as money.

sheet, means that every transaction in assets requires four entries. Furthermore the instruments of balance sheets include promises to make payments in some agreed upon currency either on demand, at some time or if some contingency occurs. The M' states that the means to make such promised payments is normally derived from either realized or expected future income flows.²⁷

Looking at a capitalist economy as a set of interrelated balance sheets and income statements, recognizing that items in balance sheets set up cash flows through time and integrating balance sheet changes with income flows leads to an alternative structuring of the economy to that which takes the technical conditions of production, a construct called preferences and maximizing behavior as primitive economic concepts. In this modeling maximizing behavior remains important, but the maximizing behavior of critical importance takes the form of present decisions that M's over time will exceed M with an ample margin of safety. The appropriate construct to use in modelling such relations is the family of short and long term cost curves.²⁸

27. If a capitalist economy is functioning normally then expectations of future M's will enable a unit to obtain at least some of the funds currently due on liabilities by rolling over the principle part of the payments that are due.

28. The primacy of costs and the division of costs into out of pocket costs, overhead costs and financing costs is part of the additional structure needed for the modelling of a modern capitalis economy.

The maximizing decisions that lead to $M \rightarrow C$ action (financing M of spending on C of investment output) cannot be divorced from uncertainty.

Of course the importance of the linked balance sheets and income statements depends upon the economy being capitalist, but capitalism is the economic society in which we actually live and whose behavior we seek to understand.

E. Two Price Levels.

For non-neutrality of money (and finance) to be a deep part of a model of the economy and not an afterthought, the monetary (and financial) variables of the model need to enter in essentially different ways in different parts of the system. Following Keynes, an increase in structure is obtained by separating aggregate demand into investment and consumption demand and allowing for two sets of prices to be endogenous to the model: the prices of current output, including investment output (the CPI), and the prices of capital and financial assets (the Dow Jones). The proximate determinants of these two price levels are quite different.

Output prices are the vehicle by which businesses recover their direct costs, acquire the funds that enable firms to pay overhead costs and earn profits. Money wages are the main component of direct costs. The mark up is the way firms capture the funds that pay overhead costs and earn a profit. As direct

costs are reduced to labor costs in a closed economy, the price level of current output can always be decomposed into labor costs per unit of output and a mark up. Part of the mark up is used to pay the overhead labor, the rest in the integrated economy are gross profits.

The aggregate of the mark ups that can be earned by the producers of consumption goods is determined by gross profits available for the producers of consumption goods, which in turn are determined by the composition of aggregate demands. In particular the gross profits available for the production of consumer goods is not determined by an interaction of production functions and preference systems which would have it that the gross profits are equal to the marginal product of capital times the quantity of capital. In particular, under heroic simplifying assumptions, the total sum of the mark ups that can be earned in the production of consumer goods is determined by the wage bill in the production of investment outputs.²⁹

In this way of looking at the economic process profits in the production of capital assets are determined in the

29. Whereas the labor and material costs in the production of investment goods are well determined, the mark ups in the production of investment goods depends upon bargaining among the producers of investment goods and the purchasers of investment goods. As far as profits in consumer goods production is concerned "the mark up" per unit of output is an ex ante variable determined by producers for those consumer goods whose producers are able to exercise market power and is an ex post variable for those consumer goods that are produced and sold under competitive conditions. The aggregate of profits over consumer goods sold under competitive and market power conditions adds up to the amount determined by the structures of demand.

negotiations between the purchasers and producers of investment goods, where the weight of an agent in determining this markup is determined by its market power. (access to financing is one attribute of market power). Aggregate profits in the simple skeletal case are equal to the wage bill in the production of investment output plus the profits earned in the production of investment output: aggregate profits equals the total spent on investment goods.

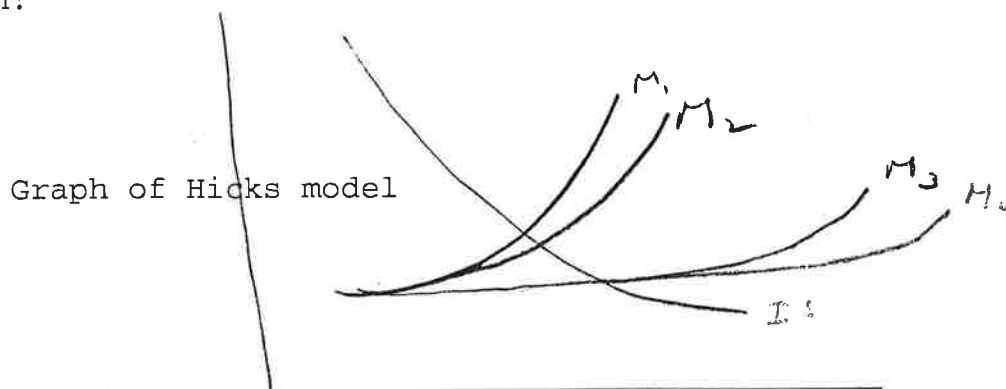
Thus the outcome of the negotiations between business men and bankers leads to a money amount of financed investment, and this money amount of financed investment is the savings of all units even though some capital income finances consumption spending.

Aggregate financed investment over an accounting period, as determined by the decisions of "bankers and business men", determines the mass of profits available to businesses. Once this mass is determined then the competition among "capitals" for profits determines the details of what is produced and employment.

F. Hicksian Non-Neutrality

All economists are familiar with one model in which money is not neutral. It is the fixed money wage IS-LM model of Hicks.

The IS-LM model without a labour market reduces to the familiar graph:



In this graph an increase in money from M_1 to M_2 leads to a lowering of interest rates and an increase in income. Note that in the "liquidity trap" an increase in money from M_3 to M_4 does not change either income or the interest rate: money is neutral when the economy is in a low level "equilibrium".

A bit of the history of thought. Pigou had a labor market determination of aggregate output prior to Keynes' General Theory.³⁰ One objective of the General Theory was to create a model of the economy in which the standard labor market equilibrium does not determine an economy's normal state or center of gravity. Most well trained economists of the time (and ours) are unwilling to give the monetary-financial sphere the full partnership in determining the behavior of the economy which is central to Keynes' vision of the capitalist economy.

30. A.C. Pigou Theory of Unemployment 1933

As a result economists grafted a labor market determination of aggregate income upon the exposition designed by Hicks. In this view, in an unemployment position of the standard Hicks diagram, market forces determine two levels of income: one determined by the Keynesian aggregate demand relations and the second determined by the labor market. These two have to be reconciled. The reconciliation begins by noting that unemployment is like any other excess supply situation: excess supply of labor leads to the lowering of wages and thus of prices. This increases the price level deflated value of the presumed exogenously determined money supply and this, in turn, increases the level of consumption at every level of income.³¹ Such an upward drift of consumption due to price level deflation shifts Hicks' IS function to the north west. With an unchanged quantity of money both income and interest rates increase. This wage rate-price level reaction ends when the excess supply of labor is eliminated. As there is no equilibrium outside of full employment which is determined by productivity and thrift, money is neutral.

Recent work by Caskey and Fazzari, and De Long and Summers,³² tend to validate the Keynesian theorem that if price

31. There is an ambiguity in the mechanism that leads to the upward drift of the consumption function: whether it is due to accumulation or to a rise in the price level deflated value of money balances. A further ambiguity is whether money is outside or inside.

32 John Caskey and Steve Fazzari "Aggregate Demand Contractions with Nominal Debt Commitments" Economic Inquiry , October 1987, p. 283-97

level flexibility exists then an initial condition of unemployment is likely to raise not lower unemployment. In this work, if $dp/dt < 0$ then either or both of the burden of private debts increases or the real (price level adjusted) interest rate increases. This means that in an economy with private debts and $Y_f > Y$, a fall in money wages and money prices will lead to a fall in Y that swamps whatever increase in Y that is triggered by the effect enunciated above. This is so because the fall in wages and prices increases the already heavy burden of debts, which has adverse effects on the viability of financial institutions and the financing of investment.

Keynesians and macro-economists in general need to distinguish between relative price flexibility and price level flexibility. Relative price flexibility serves a useful purpose in resource allocation whereas the usefulness of price level flexibility in response to excess supply of labor is questionable.

g. Liability Structures.

The burden of debt is a useful concept for macroeconomic research. We distinguish classes of units in debt: business, households, government and international. During each accounting period a portion of the revenues of each economic agent has been

J. Bradford De Long and Lawrence H. Summers, "Is Increasing Price Flexibility Stabilizing?" American Economic Review December 1986. 1031-1044

prior committed by debt, equity and lease contracts: these prior commitments are on account of both principle and interest. In the stripped Keynesian model which draws upon Kalecki we have for business firms:

$$Pi = I, \text{ Profits equals investment.}$$

In the more complete statement we have

$$Pi = I + \text{Gov. Def} - \text{Bal Tr Def} + C(Pi) - S(w).$$

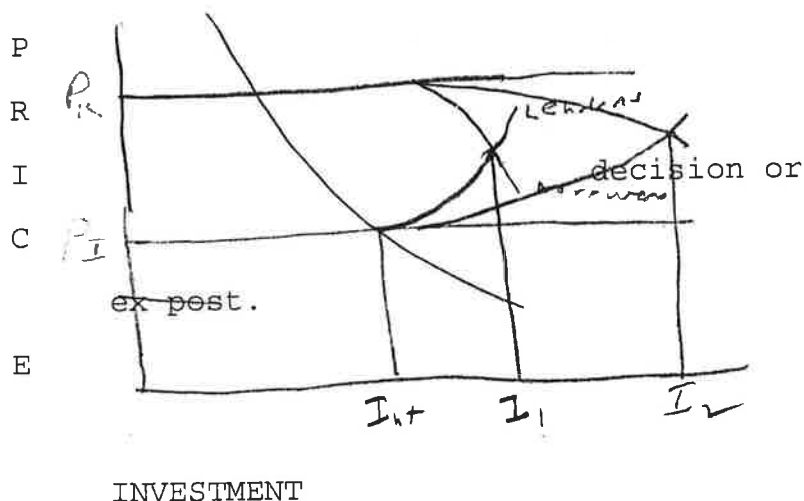
Internal finance is:

$$\begin{aligned} \text{Int Fin} &= Pi - Tx(Pi) - (\text{Int} + \text{Prin}) \text{Bnds} - \\ &(\text{Int} + \text{Prin}) \text{Lns} - \text{Cust Div.} \end{aligned}$$

Note that over any period the greater the interest and principle paid on bonds and loans and the greater the customary dividend the smaller the amount available for internal finance.

Furthermore the greater these prior committed payments due to the liability structure the smaller the fall in Pi that would lead to an inability to fulfill financial commitments out of the proceeds from market revenues.

The Minsky Diagram.



Aggregate internal funds is a rectangular hyperbola in the price investment plane. For a fixed aggregate profits, (P_i), the greater the tax rate on profits, the level of indebtedness, the interest rate and the traditional dividend, the smaller the aggregate internal funds. Note that if debts are either short term or are long term but rates adjustable to market rates (a prime + convention for the indexing of rates) then a rise in interest rates will draw the internal finance rectangular hyperbole towards the origin, reducing the amount of investment that can be financed with internal funds. A sufficiently great rise in interest rates may make the carrying costs on outstanding debts greater than profits: Firms in such a position will be

unable to finance any investment internally and may be forced to sell assets to meet payment commitments on debts.

Lenders and borrowers risk enter into the determination of investment. The P_K depends upon expectations of future profits, which in turn reflects the maintained model of the economy of the agents whose expectations are relevant to investment.

The P_I is a mark up on labor costs. The intersection of the internal finance hyperbole with the P_I line yields the maximum internally financed investment. (Int on the diagram.) Greater investment depends upon the willingness of external financiers (bankers) to lend and the business to borrow. The extent of borrowing depends upon the risk assigned to leveraging by borrowing firms and the risk assigned to lending to levered firms by financiers. The result is that at some point beyond the investment that can be financed internally the "demand" price for investment goods falls away from the P_K line because of borrowers risk and at some point the "supply" price of the investment good rises above the P_I line because of lenders risk.³³ (I_1 reflects greater borrowers and lenders risk premia than I_2) Investment financed depends upon internal funds and the availability of external funds.

The liability structure that results leads to a prior commitment of profits earned as the future unfolds. The

33. Lenders risk can be observed in higher interest rates and tighter covenants on financing contracts, borrowers risk does not have such observable measures but takes the form of firms that have not used all their "borrowing" power.

aggregate burden of the debt depends on the size of these prior commitments relative to the gross profits of the firms in the economy. In a capitalist economy where positions in capital are financed in part by debt a collapse of aggregate profits will lead to an explosion in the burden of the debt.³⁴

3. The special Minsky view.

The above identifies Post Keynesian economics with a theory of investment which emphasizes the cash flows that firms earn and expect to earn and the need to finance investment programs by a combination of internal and external funds. The emphasis upon expected cash flows as the motivation for investment and realized cash flows as the source of funds which validates or does not validate the payment commitments embodied in the liability structure means that a market rather than a technological determination of these cash flows is needed. This wedges the Keynesian analysis which emphasizes the capitalist nature of the economy being analyzed with the Kaleckian analysis of the determination of gross profits.³⁵

34. Albert G. Hart, Debts and Recovery Twentieth Century Fund 1937 noted that the burden of indebtedness of railroads increased between 1929 and 1933 because income fell.

35. This is also the model of the determination of profits of Jerome Levy. See S. Jay and David Levy Profits and the Future of American Society, Harper & Row. New York 1983

It was pointed out that the internal funds available for investment are determined by the investment plus investment surrogates through Government deficit financing and the international trade balance minus the funds prior committed to the validation of outstanding debts and to a customary dividend. A growth of debt relative to profits or a sharp rise in interest rates can decrease the internal funds available to finance investment.

A special "Minsky" hypothesis states that *"Over a run of good times borrowers and lenders risks are attenuated and the ratio of debt financing to internal financing increases"*. Inasmuch as the circuit runs from total investment to profits, a rise in the ratio of total investment to internal funds leads to a rise in profits, which in the aggregate makes the validation of the increased debt financing "easy": Furthermore those who leveraged prosper. The interest rate structure during periods when the business debt burden is light provides an inducement to business men and their bankers to not only leverage investment but also to 1) use short rather than long term debt financing and 2) to refinance lightly indebted positions in capital assets so as to increase indebtedness.

I characterize payment commitment - cash flow relations as being either hedge, speculative or Ponzi finance, depending upon whether the cash flows can readily pay interest and the principle due on maturing debts during the period of reference (hedge

finance), whether there is a need to refinance part or all of the principle falling due each period even as interest can be paid out of earnings (speculative finance) or whether there is a need to capitalize interest that is due (Ponzi finance). A special Minsky conclusion is that *over a period of good times the weight of units in first a speculative and then a Ponzi plus speculative finance posture increases.*

This progression transforms the financial-economic system from being robust, in the sense that small changes in indebtedness, interest rates or profit flows are damped out, to being fragile, in the sense that such small changes will trigger large responses. It also follows that in a small government-constrained central bank Capitalist economy this progression of financing relations makes the economic environment hospitable to a debt deflation process. A not unusual event, which in a robust financial structure has no significant effects, will have large consequences in a fragile economy.

I believe the events of the past decades more or less conform to the special Minsky case, with Government plus central banking containing the thrust to incoherence. In this view the large government deficit and the so called bailout of savings institutions and banks aborted developments which would have led to a large depression.

One aspect of this view is that what happens during business cycles is determined by a combination of endogenous developments

and policy interventions. In the abstract even a debt deflation without the constraints due to government intervention has a natural ending, when all debts are wiped out and all capital assets are held in simple ownership. It is also noted that unless there is a break down in the authority of government, intervention will take place to halt the final liquidation of the banks and of all debts that this implies.

4. Conclusion: The Post Keynesian View.

The subject of post Keynesian economics is capitalism. As a result of the demise of the Lenin -Stalin model of socialism, the problems raised by post Keynesian economics is of even greater relevance than hitherto. From a post Keynesian perspective the problem of the creation of capitalism in what had been the Socialist economies is the problem of creating a financial structure. In particular there are capital assets in industries that would be best private but there is no wealth in the population which can purchase them.

This is also, but to a much lesser extent a problem in those rich capitalist economies, such as Italy, where privatization may be the order of the day but there seems to be a shortage of domestic private wealth which is willing to take positions in these privatized firms. It seems as if it is no simple matter to get off of the back of the tiger of a Socialist scheme, for the

financial prerequisites of capitalism have to be created which includes the existence of private wealth which of course does not exist in these countries.

The problem with the theory that allows for

1. capital values to be endogenous as the capitalization of income
 2. that has the capitalization of future incomes determine the demand price of investment
 3. which has the supply price of investment as a function of the money wage
 4. which allows for the internal and external financing of investment and positions in capital assets
 5. which has debt structures that are prior claims to the income imputed to capital assets
 6. in which gross capital income, as well as the overall level of income is determined by investment and investment surrogates
- is that the nice equilibrium solution does not exist. The modeling leads to complex non linear time dependent relations which as attempts to model and solve or simulate these ideas has shown lead to complex time series which exhibit what can be considered periods of chaotic behavior.

All however is not lost. If we refer back to work done in the 1950's and early 60's, ceilings and floors, which could be manipulated by the Federal Reserve System, transformed explosive accelerator multiplier processes into rather well behaved

constrained cyclical processes.³⁶ Analytically the ceilings and floors of these models are the imposition of new initial conditions and the time series that "run" are the result of the structural interdependencies, the reaction coefficients which determine the coefficients that reflect interactions and the initial conditions: when a dynamic model is in an unconstrained run then the initial conditions for time t are the model determined values of prior periods. Policy, including the policies that, for example, are built into a tax structure, can make the initial conditions for the subsequent run of the economic process other than what the model would determine.

In this interpretation a policy regime, which includes much of the institutional structure of an economy is a device to prevent or contain the endogenous disruptive forces in a complex capitalist economy. The essential conclusion of this variety of post Keynesian economics is *anti laissez faire*, that market economies which are as convoluted as modern capitalist economies requires an apt policy regime if the endogenously determined thrusts to incoherence are to be contained.

36. Hyman P. Minsky, Monetary Systems and Accelerator Models, American Economic Review, December 1957

A Linear model of Cyclical Growth, Review of Economics and Statistics May 1960

Piero Ferri and Hyman P. Minsky ???